

CENTRO REGION- PORTUGAL

PEER REVIEW REPORT



Study Visit & Peer Review Workshop

10 -12 March 2020

Author:

**ANIMAFORUM – ASSOCIAÇÃO PARA O DESENVOLVIMENTO DA
AGROINDÚSTRIA (AGROCLUSTER)**

1. SUMMARY

This report aims to reflect the results of the study visit to the CENTRO Region of Portugal, within the scope of the Agrirenaissance project, taking into account the agenda organized by Agrocluster, which involved the presentation of several research works developed by Universities and Research Centers. Several visits to companies were also organized, in order to demonstrate the business potential of the CENTRO Region, verifying the Good Practices implemented, which could be replicated in other countries.

The main objective of this 3 days study visit has been based on the following three areas:

1. R&I infrastructure & capacities.
2. R&I public-private collaboration.
3. Hybridization of the agri-food sector with other sectors within and across regions.

Although all presentations and visits were confirmed, the COVID19 pandemic meant that the entire Portuguese business companies take contain measures in order to prevent the spread of the virus and as such, it was not possible to comply with the agenda that had been prepared. The World Health Organization declares on March 11, 2020, the pandemic outbreak.

In any case, we will address in this report, what has actually been achieved and what remains to be presented.

On the first day, the idea was to give some examples in R&I infrastructure & capacities, and R&I public-private collaboration, but only the National Institute for Agrarian and Veterinary Research - Portuguese Research Station for Animal Production (INIAV) was attended. INIAV is an entity whose mission is to implement scientific policy and carry out research to support public policies, in defense of national interests and in the pursuit and deepening of common European Union policies.

On the second day, it was possible to visit AGROMAIS, a company with over 30 years of experience and know-how. AGROMAIS distinguishes itself as the largest organization of cereal and horticultural producers in Portugal, and it's performance is based on quality processes, constant technological innovation and environmentally sustainable and socially responsible practices, seeking to maximize the value of the products sold and, thus, the profitability of their members' farms.

Was possible also to know TAGUSVALLEY – PARQUE TECNOLÓGICO DO VALE DO TEJO, a Science and Technology Park (but was not possible to visit the facilities), in order to understand how Hybridization of sectors is carried out in the Region. The strategy of TAGUSVALLEY is based on the sectors of Information and Communication Technologies, Energy, Metal-mechanics and Agri-food, areas where it seeks to identify opportunities and synergies with regional actors, with a view to creating a system that innovation and

entrepreneurship, together with a policy of attracting and encouraging the establishment of qualified human resources.

On the 3rd day, it was not possible to carry out any of the scheduled visits, and the Peer Review was made later, by a survey, taking into account the visits and presentations that were possible to carry out.

2. PEER REVIEW METHODOLOGY & RESULTS

2.1. PHASE 1: STUDY VISIT

The goal of the planned agenda was to show to project partners and stakeholders some of the research infrastructures, institutions and enterprises of the CENTRO Region of Portugal, demonstrating their projects and some Good Practices that can be implemented in other countries.

In this report, we will present all the companies and institutions that were planned to be carried out (and not just those that were actually possible to achieve), in order to understand the full potential of the Region.



AGRIRENAISSANCE Meeting – Agenda

Torres Novas, 10/12 March 2020

DAY 1 10 th MARCH 2020	
08:45	Meeting point: Hotel lobby / Bus transfer
09:00	Arrival at Agrocluster facilities
09:00 – 09:20	Official welcome
09:20 – 09:30	Presentations by attending members
09:30 – 13:00	Presentations of:
	Instituto Politécnico de Santarém / Escola Superior Agrária de Santarém https://siesa.ipsantarem.pt/esa/si_main
	Instituto Politécnico de Tomar http://portal2.ipt.pt/en/
	Universidade de Aveiro https://www.ua.pt/
	Instituto Nacional de Investigação Agrária e Veterinária (INIAV) http://www.inia.pt/
13:00 – 14:30	Break Lunch

S T E E R I N G G R O U P M E E T I N G	
14:30 - 15:00	Presentation of third semester results (main indicators, budget execution)
15:00 - 16:00	Review of communication activities
16:00 - 18:20	Presentation of action plans (20 min /region)
18:20 - 19:00	Next steps (organization of phase 2, mid term review, etc...)
19:30 - 19:40	Bus transfer to Hotel Torres Novas
20:15	Dinner at Hotel Torres Novas Restaurant

DAY 2 11TH MARCH 2020	
STUDY VISITS	
08:45	Meeting point: Hotel lobby / Bus transfer to study visits
09:00 - 09:10	Trip to AGROMAIS
09:10 - 11:30	Presentation and visit to the facilities of AGROMAIS http://agromais.pt/
11:30 - 12:00	Trip to Tagusvalley - Parque Tecnológico do Vale do Tejo
12:00 - 13:30	Presentation and visit to the facilities of Tagusvalley http://tagusvalley.pt/en/tagusvalley/presentation/
13:30 - 14:30	Light Lunch
14:30 - 16:00	Trip to Cooperfrutas, CRL
16:00 - 18:00	Presentation and visit to the facilities of Cooperfrutas, CRL http://www.cooperfrutas.pt/?lang=en
18:00 - 19:30	Bus transfer to Hotel Torres Novas
DAY 3 12TH MARCH 2020	
STUDY VISITS	
07:50	Meeting point: Hotel lobby / Bus transfer to study visits
08:00 - 09:30	Trip to CATAA - Centro de Apoio Tecnológico AgroAlimentar e Inovcluster
09:30 - 11:40	Presentation and visit to the facilities of CATAA - Centro de Apoio Tecnológico AgroAlimentar http://www.cataa.pt/ and Cluster Agroindustrial do Centro (Inovcluster) https://www.inovcluster.pt/language/en/
11:40 - 12:45	Presentation and visit to CEI - Centro de Empresas Inovadoras http://www.cataa-cei.pt/
13:00 - 14:00	Break Lunch
14:15 - 16:00	Visit to IPCB - Instituto Politécnico de Castelo Branco: <ul style="list-style-type: none"> Escola Superior Agrária https://www.ipcb.pt/esacb/escola-superior-agraria Centro de Biotecnologia de Plantas http://cbpbi.ipcb.pt/ Workshop Peer Review
16:00 - 17:30	Bus transfer to the Hotel

Day 1: 10th March, 2020

➤ **INSTITUTO POLITÉCNICO DE SANTARÉM (IPS) / ESCOLA SUPERIOR AGRÁRIA DE SANTARÉM (ESAS)¹**

https://siesa.ipsantarem.pt/esa/SI_MAIN

The Polytechnic Institute of Santarém is a polytechnic public higher education institution, at the service of society, committed to the high level qualification of the citizens, destined to the production and diffusion of the knowledge, creation, transmission and diffusion of the knowledge of professional nature, Science, technology, the arts, guided research and experimental development, emphasizing centrality in the student and the surrounding community, within an international frame of reference.

It is recognized as a pole of development and a reference in training, culture and research developed in the region, created in the 70's, currently comprises five High Schools, four in the city of Santarém and one in the city of Rio Maior.

The Escola Superior Agrária de Santarém is one of the oldest and most prestigious agricultural teaching institutions in the country, providing also direct services to SMEs in the region with the aim of developing innovative products, making them more competitive.

<p>130 years of history Escola Superior Agrária de Santarém</p>			<p>Quinta do Galinheiro Quinta do Quinto Quinta do Bonito</p>	<p>237 ha of experimental fields</p>				
		<p>Quinta do Galinheiro Quinta do Quinto Quinta do Bonito</p>	<p>237 ha of experimental fields</p>					<p>Olive trees, vineyards, cereals, autochthonous breeds</p>

¹ Not attended

R&D Projects



20 projects on going
Partnership with other
Research Institutes,
Associations and Enterprises



➤ INSTITUTO POLITÉCNICO DE TOMAR (IPT) i

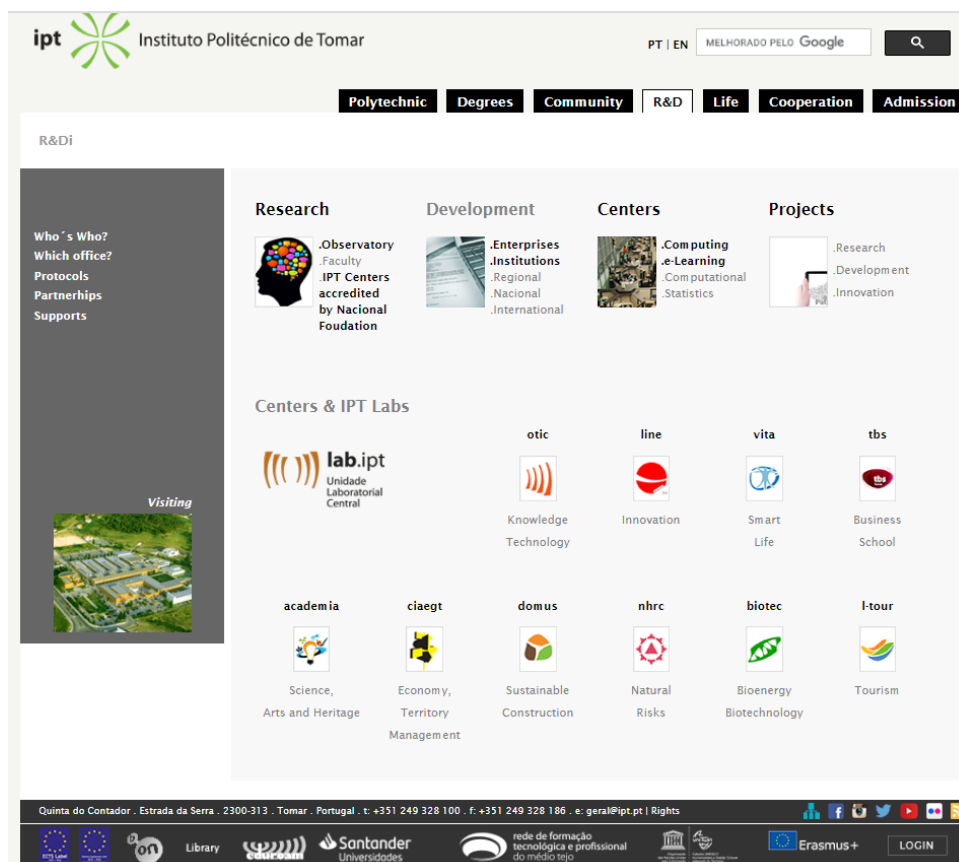
<http://portal2.ipt.pt/en/>

The Polytechnic Institute of Tomar (IPT) has been a reference institution in Higher Polytechnic Education for 25 years. With 23 undergraduate courses, IPT offers solutions that cover the most diverse areas of knowledge and constantly seeks to update the syllabus according to the needs found in the business fabric. IPT has a campus in Tomar that welcomes students from the Higher School of



Technology in Tomar and the Higher School of Management in Tomar and, in Abrantes, the Higher School of Technology in Abrantes.

IPT also has support infrastructures and services that respond to the diverse needs of students and companies, with engineering laboratories equipped with unique machines in the Iberian Peninsula, computer rooms capable of responding to the diverse demands of technological evolution, business simulation rooms and technical laboratories.



➤ UNIVERSIDADE DE AVEIRO (UA) ⁱ

<https://www.ua.pt/>

The University of Aveiro is one of the 11 founding members of the ECIU, the first European university where students and researchers cooperate with municipalities and companies to tackle the major challenges of the 21st century. Its innovative model was approved, in November 2019, by the European Commission. Recently, the new visual



identity of the ECIU University was approved, with the involvement of its 12 institutions. The now approved identity reflects values such as innovation and timelessness and intends to project a homogeneous image that mirrors the values of the ECIU University and communicates with the different target audiences.

Innovative products and solutions are developed at the University of Aveiro to contribute to the advancement of science and technology. The University is a privileged partner of companies and other national and international organizations with whom it cooperates in numerous projects and for which it provides important services.

During 2019, 628 research and technology transfer projects have been active in UAVR, 134 of these with international collaboration. 40 projects were funded by ERASMUS+ and 48 by Horizon 2020. Among these projects are 3 ongoing ERC Grants and three more were approved for funding.

The University of Aveiro (UA) fosters and supports entrepreneurship and the creation of new companies, by investing in infrastructures and the provision of services which are capable of boosting entrepreneurial potential amongst its own staff as well as others in the region. This support is provided in different ways, in different phases, and involves the organisation of training sessions, thematic workshops, competitions for ideas and prototypes, incubation programme, networking and specialised mentoring.

This University implemented a strong interaction with the business community, as well as with regional and local government authorities, in training and research focused on the regional economy and on helping to address the needs of society, has been promoted via an innovative and transversal approach to a broad range of scientific areas.

This strategy has been addressed by, in particular, working on benchmark projects with Portuguese and international companies, as well as promoting and encouraging the business eco-system in the region.

Today, it can be said that the UA is a Civic University with strong international networks of education and research, an innovative university recognized for its outstanding research and for its role in regional development and with a growing reputation at an international level.

➤ INSTITUTO NACIONAL DE INVESTIGAÇÃO AGRÁRIA E VETERINÁRIA (INIAV)

<http://www.inia.pt/>

The Instituto Nacional de Investigação Agrária e Veterinária (INIAV) is the State Laboratory, in the area of Agriculture competences, which develops research activities in the agronomic and veterinary fields. INIAV was created in 2012, with the responsibilities related to agricultural and veterinary investigations of the former Instituto Nacional dos Recursos Biológicos I.P. (INRB), with its attributions relating to the areas of fisheries and aquaculture being incorporated into the Portuguese Institute of the Sea and the Atmosphere, I. P. (IPMA).

INIAV is organized in five Research and Services Units:

- ✓ Strategic Research Unit and Biotechnology and Genetic Resources Services
- ✓ Strategic Research and Services Unit for Agrarian and Forestry Systems and Plant Health
- ✓ Strategic Research Unit and Technology and Food Security Services
- ✓ Strategic Research Unit and Production Services and Animal Health
- ✓ Technology and Innovation Unit

The mission of INIAV is related with Applied Research, Technical and Scientific Advice, Training and Knowledge transfer, Laboratory Services and State Functions (they have the National Reference Laboratories and National Genetic Resources).



National Institute for Agrarian and Veterinary Research

what we do...

Research & Innovation

- Environment and Natural Resources
- Conservation and Improvement of Plant and Animal Genetic Resources
- Agrarian Systems: Production and Sustainability
- Forestry
- Animal Production
- Plant Health
- Animal Health
- Food and Feed Safety
- Food and Forestry Technology

Genetics Resources

- BPGV - Portuguese Plant Genebank
- BPGA - Portuguese Animal Genebank
- Improvement National Programmes
- National Reference Collections
 - National Ampelographic Collections - olive trees and fruit trees collections, ...
 - Industrial Microbiology Culture Collection
 - Herbario, Seed, Wood and Cork, Fungus, Insects, Mites, ...

Technical and Knowledge Transfer

- Queries and technical advice
- Field days and technical seminars
- Technical manuals
- Scientific publications

GOEFLUENTES: Livestock effluents: Farm scale effluent management towards agronomic and energetic valorization
<https://projects.inia.pt/goefluentes/>

SUBPROMAIS: Use of agro industrial byproducts in animal feed
www.subpromais.pt

LEGFORBOV: Alternative feeds for beef production
<https://projects.inia.pt/LEGforBOV/>

CHILDLAMB: Production of small portions of frozen lamb meat from undervalued carcass pieces
www.childlamb.com

GOBOV+: Improvement of beef cattle sector production
<http://www.bovmais.pt/>

Day 2: 11th March, 2020

➤ AGROMAIS

<http://agromais.pt/>

With more than 30 years of experience and know-how, Agromais has invested 16.5 million euros in storage and processing facilities (construction of potato and onion conservation and storage infrastructures, broccoli, potato and onion preparation and packaging lines, acquisition of harvesting equipment and application of plant protection products), and has marketed 530 million euros in agricultural products from its members

At the end of the 1980s, AGROMAIS was the largest cereal cooperative in the country. With the increase in production costs and the fall in the price of corn and wheat there was a need to look for alternative crops such as potatoes (industry and consumption), broccoli, courgette, tomatoes, peppers, peas, beans, onions and barley for industry brewery, being today one of the most important producer organizations in the country.

All production is sold collectively, through direct negotiation between AGROMAIS and its customers, namely the agro-industry. Integrated production methods are practiced

and the GLOBAL G.A.P (ex-EUREPGAP) protocol, accredited by UKAS, among other production quality control protocols, was implemented.

Its performance is based on quality processes, constant technological innovation and environmentally sustainable and socially responsible practices, seeking to maximize the value of the products sold and, thus, the profitability of our members' farms.



➤ **TAGUSVALLEY – PARQUE TECNOLÓGICO DO VALE DO TEJO**

<https://tagusvalley.pt/>

TAGUSVALLEY - Tecnopolo do Vale do Tejo is a Science and Technology Park, with the objective of stimulating entrepreneurship and competitiveness in the Region, based on Innovation and Technology. The strategy of TAGUSVALLEY - Tecnopolo do Vale do Tejo is based on the sectors of Information and Communication Technologies, Energy, Metal-mechanics and Agri-food, areas where it seeks to identify opportunities and synergies with regional actors, with a view to creating a system that innovation and entrepreneurship, together with a policy of attracting and encouraging the establishment of qualified human resources.

They have several services, such as: business incubation, development of business ideas, business reception, development of new food products and design of machines and equipment for industrial processes.



Business Innovation Centre



Accreditation System Management body
EU Network with 300+ members (Europe,
Asia, Africa, North and South America).



EU commission brand managed by EBN
Atributed to TAGUSVALLEY in 2011



One of the services provided by TAGUSVALLEY is the FoodFablab, where companies or individuals can test or manufacture food products. The main aspect that distinguishes FoodFabLab is that the industrial plant provided by Tagusvalley has an industrial license that allows companies to introduce the products manufactured in the FoodFabLab in the market. This service was created as a response to several inquiries from people that lost their jobs, during the economic crisis that hit Portugal between 2011 and 2015, and wanted to start their own food production projects. Meanwhile this concept has been developed and now includes not only the manufacture targeted for market entry but also for testing at pilot scale, supporting internal R&D processes of the users. This



allows companies and individuals to significantly lower their initial investment and/or dedicate their plants exclusively to production as they don't need to interrupt production for testing. As such, the FoodFabLab supports not only SME's that are

starting and testing ideas and concepts but also larger companies that need an industrial environment to test processes.





➤ **COOPERFRUTAS, CRLⁱ**

<http://www.cooperfrutas.pt/?lang=en>

Cooperfrutas, CRL is an Organisation of Fruit Producers (OP), recognized and awarded in recent years with several distinctions such as SME Leader and SME Excellence. It began from a number of producers' will who have developed a daring project for the creation of a unit sized to suit their productive capacities and technically equipped to maintain the quality of the products and to match the highest standards and demands of the modern distribution.

It counts currently with its own production of fresh fruit, namely Rocha pear, apple in several varieties, plum and peach and has also production of fruit purees with no added sugar, which are distinguished by their high quality standar.

Cooperfrutas has a technical staff that provides a cross-monitoring, from the field to the customer, in compliance with the rules of Integrated Production, Global GAP and traceability. They had implemented the standards of HACCP and the BRC certification, IFS among others, and they works by the constant demand for the improvement of their final product, which results in a high quality product, respecting the rules of food safety and environmental sustainability through the adoption of a range of good cultural practices carried out in a rational way and integrated in the agricultural ecosystem.



This company is a modern and innovative cooperative, whose main focus is exclusively on the constant search for the improvement of its production processes, organization and quality and in instilling these principles to their members and employees.

Associated with its activity it develops a set of actions and practices to improve its environmental performance. In the central fruit warehouse has implemented a Rationalization Plan of Electric Power, makes composting of organic waste from its activity and installed a photovoltaic power production unit. Cooperfrutas also develop innovation projects together with various state-owned entities, companies and universities.

Day 3: 12th March, 2020

➤ **CATAA – CENTRO DE APOIO TECNOLÓGICO AGROALIMENTAR¹**

<http://www.cataa.pt/>



CATAA - Associação Centro de Apoio Tecnológico Agroalimentar of Castelo Branco, is a private non-profit association established in July 2010, and consists of three laboratory units (physical-chemical, microbiology and sensory analysis) and four technological development units (dairy, meat, olive and horticultural products). CATAA is dedicated to research,

development, technology transfer and training, with a primary focus on the agri-food sector.

They provide several services:

INNOVATION + I&DT

- Development of new food products
- Optimization of manufacturing processes
- Applied research

LABORATORIES

- Food safety and quality analysis
- Sensory and neurosensory analysis of food



QUALIFICATION

- Training entity certified by DGERT
- Market studies
- Training sessions applied to the agrifood sector

And they have several ongoing projects related with the agrifood sector, such as:



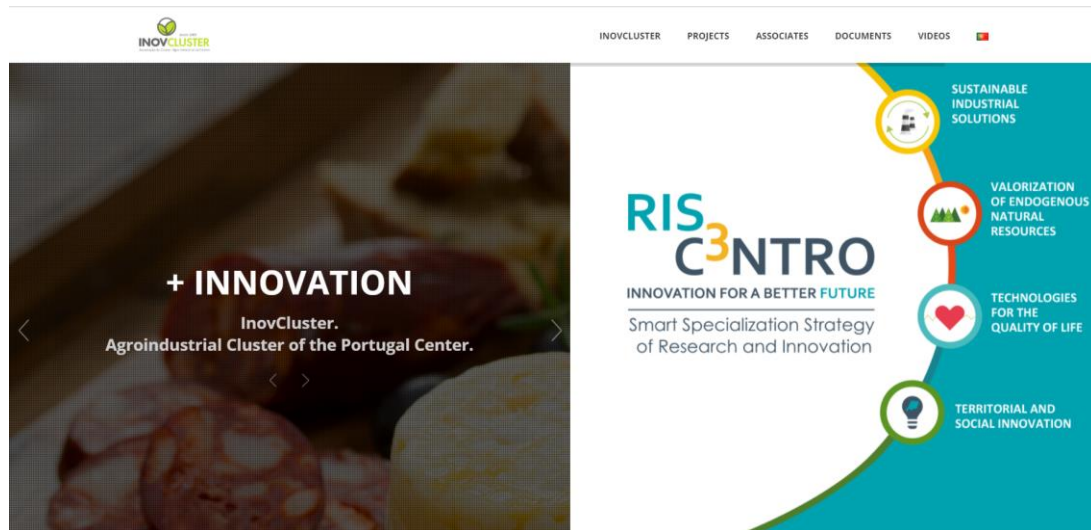
➤ **CLUSTER AGROINDUSTRIAL DO CENTRO (INOVCLUSTER)¹**

<https://www.inovcluster.pt/language/en/>

InovCluster – Associação do Cluster Agroindustrial do Centro, is headquartered at the Agro-Food Technological Support Center in Castelo Branco. Inovcluster's contribution focuses on increasing the competitiveness of local and regional production systems. It also aims at distinguishing the Central Region of Portugal at a national and international level. For this purpose, it establishes a cooperation platform amongst the key players of this sector. It provides companies support through innovation processes, RTD, knowledge transfer, training, new product development, services and processes, marketing and internationalization.

Currently, InovCluster has 179 associates of which 144 are companies and entities such as: Associations / Cooperatives, Higher Education Institutions, R & D institutions linked to the agribusiness and agro-food sector, and several municipalities of the Portuguese Centro region.

InovCluster has been supported by the Municipality of Castelo Branco and funded by COMPETE – Operational Competitiveness Factors Program, by the National Strategic Reference Framework and by the European Union through the European Regional Development Fund.



➤ **CEI – CENTRO DE EMPRESAS INOVADORAS'**

<http://www.cataa-cei.pt/>

CEI's mission is to support entrepreneurs and companies in the process of effectively developing their business ideas, transforming them into sustainable business realities.

Through this mission, the CEI intends to catalyze the development of the region, and of the entrepreneurial community, by providing



qualified spaces and services to companies, supporting entrepreneurs, transferring technology and promoting cooperation between companies, R&D institutions and other actors relevant.

CEI provides several services thinking in the different stages of development:

- ✓ Focus on results;
- ✓ Coaching mentoring and experience;
- ✓ Networking;
- ✓ Support Services,
- ✓ Installations;
- ✓ Advice on Financial, Marketing and Digital Technologies issues;
- ✓ Entrepreneurial ecosystem;

- ✓ Privileged partnerships with service providers;
- ✓ Dedicated workshops;
- ✓ Privileged access to events organized by CEI.



➤ **IPCB – INSTITUTO POLITÉCNICO DE CASTELO BRANCO:**

The INSTITUTO POLITÉCNICO DE CASTELO BRANCO (IPCB) is a public higher education institution that started its activity in 1980 and which constitutes a reference of confidence in the high-level qualification of citizens, in the production and dissemination of knowledge, as well as in cultural, artistic, technological and scientific training of its students in an international reference framework.

It has a wide training offer in its six higher schools: Escola Superior Agrária; Escola Superior de Artes Aplicadas; Escola Superior de Educação, Escola Superior Dr. Lopes Dias, Escola Superior de Gestão, e Escola Superior de Tecnologia.

○ **ESCOLA SUPERIOR AGRÁRIA**

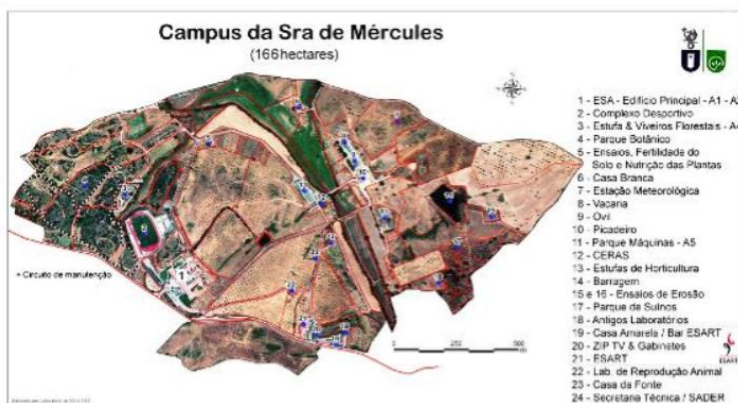
<https://www.ipcb.pt/esacb/escola-superior-agraria>

The Escola Superior Agrária de Castelo Branco was created on September 1980. The courses taught at ESACB provide students with a solid scientific, technical and practical background, aiming at exercising professional activities in the fields of Agricultural, Animal and Forest Sciences, Natural Resources and the Environment and Civil Protection, articulating theoretical knowledge with the practical reality, encouraging the spirit of critical observation and motivating students for experimentation and research, always with the objective that Engineering is able to respond to the day-to-day problems of our Society.

Infrastructure

Quinta da Senhora de Mércules (166 ha), where it is installed ESACB, has a park of machines with different workshops, horticulture and floriculture greenhouses, orchards, with 50 ha of olive groves, experimental vineyards, Vacaria (Technical Unit - Boviniculture), stable for

fattening of steers, Ovil for 300 sheep (Technical Unit - Oviculture and Capriniculture), Riding Arena (Technical Unit - Equiniculture), Extensive swine (Technical Unit - Swine), Dryland area and irrigated area, Botanical park with about 4000 trees in 22 ha, Arboretum with about 440 trees of different species, Forest nursery with a controlled environment greenhouse, Game reserve. The Escola Superior Agrária has, in its facilities, the following means of support: Zoonoses Research Center, Laboratories: Biology, Parasitology, GIS / CAD, Microbiology, Plant Protection, Soils and Fertility.



○ CENTRO DE BIOTECNOLOGIA DE PLANTAS

<http://cbpbi.ipcb.pt/>

CENTRO DE BIOTECNOLOGIA DE PLANTAS (CBP-BI) is an experimental research and development center created in partnership with local authorities, Portuguese and foreign higher education institutions, as well as with other scientific and technological centers and parks.

Managed by a private non-profit association, it develops its activity in the field of plant biotechnology with research projects in partnership and in close connection with the productive sector.

The mission of CBP-BI is to create knowledge and enhance research in the field of plant biotechnology associated with the productive sectors of the agricultural, forestry and aromatic and medicinal plants sectors.

CBP-BI goals are:

- ✓ develop knowledge related to plant biotechnology and promote its use as a factor in promoting economic activity;
- ✓ Establish partnerships and provide products and services that enable the creation and growth of companies linked to the productive sectors of the agricultural, forestry and aromatic and medicinal plants sectors;

- ✓ Provide infrastructures, equipment, technology and support to start-up companies;
- ✓ Collaborate with national and international R&D institutions in the development of projects;



2.2. PHASE 2. WORKSHOP & DISCUSSION

2.2.1 – METHODOLOGY PREPARED

The Agrocluster had prepared the Peer Review according to the methodology used in previous study visits, however due to the difficulties encountered taking into account the COVID19 pandemic, it was not possible to execute it according to the program.

We present below what we had prepared to accomplish during the Peer Review:

**Regional Diagnosis: Agri-food sector
in the Centro Region of Portugal**

Eng. Cláudia Rodrigues

10 March, 2020, Torres Novas

1

Content

- > Global context of the agri-food sector;
- > European agri-food sector;
- > Portuguese Agri-food context;
- > Regional Agri-food sector;
- > R&I in the regional Agri-food sector;
- > Agri-food sector trends in Centro Region of Portugal;
- > SWOT of agri-food sector in Centro Region of Portugal;
- > Good Practices
- > Regional Diagnosis Conclusions
- > Peer Review Workshop:
 - > Methodology presentation
 - > Time for action
 - > Conclusions

2

Global context of the agri-food

PRODUCTION INDEXES

Production index (2004-2005=100)	2003	2010	2018
Food	77	100	129
Cereals	76	100	132
Cereals	84	100	125
Vegetable oils	83	99	150
Roots and tubers	84	101	121
Fruit and vegetables	89	100	137
Sugar	89	97	134
Livestock	81	100	120
Dish	81	100	123
Meat	81	100	117
Fish	88	100	125

in FAO/STAT

- Production of all types of foodstuff has been augmenting significantly
- The urban food market has grown very rapidly in recent decades and the dynamics of the food supply chains changed
- Importance of mass production and commerce of Agriculture and Food due to the mass consumer patterns and dietary needs

3

Global context of the agri-food



- The global trade of food has rapidly increased;
- In only two decades, the worldwide food exports grew 211% and the imports 210%.

4

Global context of the agri-food

MAIN KEY CHALLENGES

(By Food and Agriculture Organization of the United Nations (FAO))

- The agriculture and food system is no longer a business and requires action from the companies and the decision-makers.
- Innovation! The societies are required to innovate. New solutions, technologies and new systems are welcomed to better prepare the future.
- Shared responsibility (all countries will be affected by the global transformations).
- Raise consumer awareness about environmental sustainability, dietary changes, food waste and pricing food.
- Producing more will be unavoidable, but it has to be done with less resources.
- Equitable distribution of income. Food prices might increase, and an equitable distribution of income is pursued for a better nutrition worldwide, food security and environmental sustainability of food systems.

5

European agri-food sector

RELEVANCE OF THE AGRI-FOOD SECTOR IN THE EUROPEAN CONTEXT

- ✓ Turnover 966,2 billion of euros (16% of the processing industry)
- ✓ Employment of around 4,1 million persons (14,6% of the processing industry)
- ✓ 274.000 companies, of which 99,1% are SMEs that contribute 48,7% for the total turnover and 63,0% for the employment of the sector
- ✓ 500 million of consumers
- ✓ 70% of the European agriculture production is bought by the Agri-food sector
- ✓ Positive trade balance of 9,8 billion euros

6

European agri-food sector

The main extra-eu destinations of the european agri-food exports

1025 age band requests by ...		cumulative data: 12 months period				monthly data			
PARTICIPATION problem Europe COMBACT		Rank 2017/18	Nov 18	Dec 17	Dec 17 to Nov 18	Nov 17	Nov 18	Difference Nov 18 to Nov 17	
EUROPE			1,000,000	937,549	62,451	84	10,748	1,000	527,450
United States of America			2	12,176	12,176	218	1,248	12,176	10,928
China			3	8,000	8,000	222	1,000	7,999	10,000
Japan			4	6,000	6,000	222	1,000	5,999	10,000
South Korea			5	4,000	4,000	222	500	3,999	10,000
Canada			6	3,000	3,000	222	500	2,999	10,000
United Kingdom			7	2,000	2,000	222	500	1,999	10,000
India			8	1,000	1,000	222	500	999	10,000
United States of Mexico			9	1,000	1,000	222	500	999	10,000
Other countries			10	1,000	1,000	222	500	999	10,000

- Agri-food exports have slowed down in the last statistical data released by Eurostat (November 2018)

7

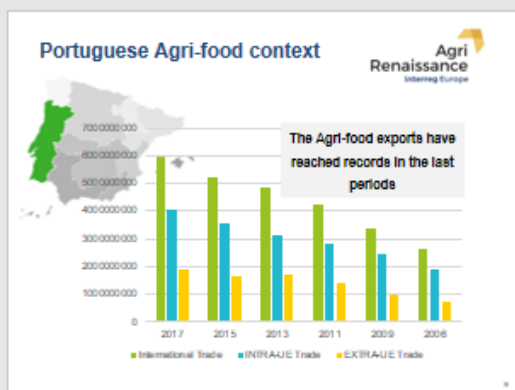
European agri-food sector

The main extra-eu destinations of the european agri-food imports

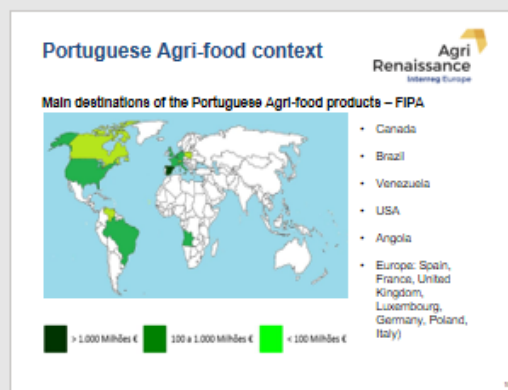
2018 April total imports from	cumulative data: 12 months period						monthly data			
	PARTNER/COUNTRY positive FUMET negative CUMET						Difference Nov 18 to Nov 17			
	Rank 2017/18	Dec 18 2017/18	Dec 17 2017/18	Dec 16 2017/18	Nov 17 2017/18	Nov 18 2017/18	Rank 2017/18	Nov 17 2017/18	Nov 18 2017/18	%
EUROPE	1	100,000	100,000	100,000	100,000	100,000	1	100,000	100,000	0%
United States of America	2	10,000	10,000	10,000	10,000	10,000	2	10,000	10,000	0%
China	3	8,000	8,000	8,000	8,000	8,000	3	8,000	8,000	0%
Japan	4	6,000	6,000	6,000	6,000	6,000	4	6,000	6,000	0%
South Korea	5	4,000	4,000	4,000	4,000	4,000	5	4,000	4,000	0%
Canada	6	3,000	3,000	3,000	3,000	3,000	6	3,000	3,000	0%
United Kingdom	7	2,000	2,000	2,000	2,000	2,000	7	2,000	2,000	0%
India	8	1,000	1,000	1,000	1,000	1,000	8	1,000	1,000	0%
United States of Mexico	9	1,000	1,000	1,000	1,000	1,000	9	1,000	1,000	0%
Other countries	10	1,000	1,000	1,000	1,000	1,000	10	1,000	1,000	0%

- Imports faced an increase of 2.1% over the year after.
- The main food origins were Brazil, the United States of America and China

8




9



10

Portuguese Agri-food context



Agri Renaissance
 Investing Europe

Main products in Portugal

Rank	Product Code	Designation	Units	Quantity Produced	Quantity sold		Sale of products		
					Total	FL Rate 2016-2017 %	Total	FL Rate 2016-2017 %	
1	10210140	Bread without honey, eggs, cheese or fruit addition	Kg	458 600 398	444 558 009	0.2%	913 105	5.0%	4.8%
2	10210140	Cheese	Kg	204 902 773	201 184 017	0.6%	517 864	4.7%	7.2%
3	10810100	Animal feed (except poultry feedstock)	Kg	1 638 206 902	1 613 608 770	0.5%	455 411	4.1%	0.7%
4	10100100	Fresh or refrigerated whole chicken, cods and hens	kg	288 304 714	252 516 452	2.7%	394 808	3.0%	5.6%
5	10510100	Cereal or powder cereal, blue-valued cereal and others	kg	81 545 967	70 391 340	7.5%	303 467	3.5%	4.8%
Main products Total					2 364 816	21.5%	4.6%		

- The 5 main products produced by the Agri-food industry in Portugal represented 21,5% of the value of sold production.
- The most sold product in Portugal in that year (2016-2017) was bread, generating around 613 million euros.

11

Portuguese Agri-food context

Agriculture and Agri-food Workforce in Portugal

- The agri-food industry has emerged as Portugal's fastest-growing export sector and a very significant area to create jobs;
- The main workforce is from family origin (72.2%);
- The employees of the Agricultural, Animal Production, Hunting and Forestry sector in 2011 were 120,230 individuals, which represent around 2,8% of the Portuguese population;
- Most of the population in this sector were employees (51.9%), 23.1% were self-employed people and the remain 18% were employers (18%);
- The productivity indicators have been increasing.

12

Portuguese Agri-food context

Type of Industry	Direct Jobs (2013)
Dairy Products	6.840
Coffee and Tea	2.740
Bakery and Confectionery	2.267
Fruit, Vegetables and Flowers	150.000
Water, soft drinks and juices	3.026
Beer	2.355
Fresh Fish	11.686
Dried and canned fish	3.581
Frozen Fish	809

- Fruit, vegetable and flowers industry was the main employer in 2013;

13



14

Regional Agri-food sector

- 100 municipalities;
- Extension area of 28.199,4 km²;
- Resident population of 2.231.346 people – close to 22% of the country's population;
- Populous cities: Coimbra (143.396 inhabitants), Leiria (126.897), Viseu (99.274) and Aveiro (78.450);
- Composed by several medium-size cities, being the interior of the territory less developed comparing to the coastal strip;
- Constituted by the river basins of Douro (Côa), Tejo (Zêzere), Mondego, Vouga, Lis and coastal streams;
- Very diverse in terms of landscape and includes relevant natural areas.

15

Regional Agri-food sector

GDP ratio of the Centro Region in the national total at current prices between 2000 and 2016 (Source: INE)

- GDP of the Centro Region was 35 million euros, representing 19% of the national GDP (2016).
- The real GDP growth rate increased by 1.8%, exceeding in 2016 the national average.
- The regional GDP has been increasing since 2008, maintaining the relative importance of previous years.
- Although the positive numbers, the GDP per capita expressed in purchasing power standards (PPS) of the Centro Region (19 700) is still below the national average (22 500).



16

Regional Agri-food sector

Production Value at Basic Prices	522.28 (Portugal)	Portugal	Centro	% Centro/522.28
Cereals	50 241,43	274,51	59,21	0,12%
Industrial Crops	20 452,87	56,81	7,2	0,04%
Forage, Herbs	22 586,86	275,78	48,81	0,22%
Vegetables & Horticultural Products	54 232,87	1 144,38	273,31	0,50%
Potatoes (excluding seeds)	10 300,32	115,85	38,27	0,39%
Fruits	28 430,32	112 024	354,57	1,38%
Grapes	2 857,71	157,30	45,38	1,71%
Wines	2 317,28	183,52	21,87	0,34%
Waxes	22 804,97	802,75	189,84	0,83%
Oilseed	9 311,87	95,47	12,19	0,25%
Other Crops products	2 782,88	74,88	3,16	0,11%
Crop Output	215 144,58	3 955,23	994,38	0,48%
Animal	100 200,56	1 895,79	736,88	0,74%
Animal products	64 818,14	940,48	302,5	0,4%
Animal Output	185 018,71	2 839,25	1 039,38	0,83%
Agricultural Services Output	20 358,33	141,1	43,21	0,21%
Agricultural GVA	400 522,81	8 905,58	2 078,93	0,52%

- The Centro Region is a strong producer of grapes with 1,71% and Fruits represents 1,38% of the PVB⁺ sector.

17

Regional Agri-food sector

Production Value at Basic Prices	Portugal	Beira Litoral	Beira Interior	Alentejo e Oeste
Cereals	4 728	7 531	1 250	9 809
Main dried legumes	725	535	383	1 037
Citrus	21 869	18 379	13 223	31 478
Main crops for industry	50 576	38 688	2 889	75 781
Horticultural Crops	27 017	X	X	X
Main forage crops	25 585	27 581	10 384	37 484
Main fresh fruits	14 000	13 134	6 416	18 244
Small berry fruits	9 540	7 422	2 584	7 820
Main Subtropical fruits	17 148	9 933	1 272	10 654
Citrus fruits	18 258	9 815	7 487	9 388
Wine nuts	735	1 078	848	1 075
Vineyard	5 010 000	4 432 000	1 998 000	9 275 000
Other crops	2 441	2 740	807	2 378

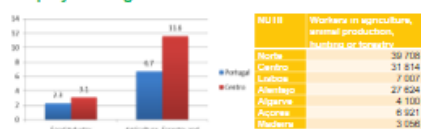
The productivity by sub-region of the Centro Region:

- Ribatejo e Oeste is the main producer of cereals, main dried legumes, potatoes, main crops for industry, main forage crops, main fresh fruits, small berry fruits, main subtropical fruits and vineyard.
- The Beira Litoral is the main producer of citrus fruits, main nuts and olive grove.

18

Regional Agri-food sector

Employment figures



- The Centro Region reveals superior numbers comparing to the national average.
- The Centro Region is established as an absorber in terms of employment in Agriculture, Forestry and Fisheries, with 11.6% of the total employment of the Region.
- The Centro Region reveals itself as the second bigger employer region of Portugal, after the North Region.

19

Regional Agri-food sector

Exports figures

	2018
Type of goods (by CN2)	Exports of goods (€)
Fish and crustaceans, mollusks and other aquatic invertebrates	224 085 414
Deerwaxes, spirits and vinegar	152 898 324
Fruits, peel of citrus fruit and melons	127 259 435
Preparations of meat, of fish, of crustaceans or mollusks or of other aquatic invertebrates	125 721 553
Preparations of cereals, flour, starch or milk; bakery products	120 898 334
Preparations of vegetables, fruit, nuts or other parts of plants	119 203 548
Milk and dairy products; bird eggs; natural honey; edible products of animal origin, not elsewhere specified or included	98 953 861
Edible vegetables and certain roots and tubers	79 910 655
Animal or vegetable fats and oils; products of their dissociation; processed fats; animal or vegetable waxes	74 295 801
Residues and waste from the food industries; prepared animal feed	64 940 048

20

Regional Agri-food sector

Exports figures



21

Regional Agri-food sector

Companies and trends over previous years

- Agriculture, animal production, hunting and related service activities
- Fisheries and aquaculture
- Food Industries
- Beverage Industries

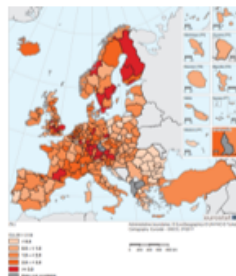


Activities have been growing in terms of number of companies, except for the "Food Industries", which has decreased that number on - 2.5%.

22

R&I in the regional Agri-food sector

- The first group of Innovation Leaders includes 53 regions with performance more than 20% above the EU average.
- The second group of Strong Innovators includes 60 regions with performance between 10% and 120% of the EU average.
- The third group of Moderate Innovators includes 85 regions with performance between 50% and 90% of the EU average.
- The fourth group of Modest Innovators includes 22 regions with performance below 50% of the EU average.



23

R&I in the regional Agri-food sector

Lisbon Region stood out as the more innovative region of the country, being the Centro Region referred as a Follower.

Qualification Group	2007	2009	2011
Country			
Portugal	Moderate	Moderate	Moderate
Region			
Norte	Moderate	Moderate	Moderate
Centro	Moderate	Medium Moderate	Follower
Lisbon	Medium Follower	Follower	Leader
Alelberg	Moderate	Medium Moderate	Medium Moderate
Algarve	Medium Moderate	Moderate	Moderate
Região Autónoma dos Açores	Medium Moderate	Medium Moderate	Moderate
Região Autónoma da Madeira	Moderate	Moderate	Medium Moderate

24

R&I in the regional Agri-food sector

% of R&D investment in the Centro Region in the national (2003 - 2016)



2016:
18.7 % of R&D
(increase of 2.3%
since 2003)

Investment in Research and Development (R&D) in the Centro Region (2003 - 2016)

2016:
447.221 € investment in
R&D
(increase of 230.187€
since 2003)



25

R&I in the regional Agri-food sector

Programs and Initiatives supporting R&I in the regional Agri-food sector

European structural and investment funds:

- Cohesion Fund;
- European Regional Development Fund - ERDF;
- European Social Fund - ESF;
- European Agricultural Fund for Rural Development (EAFRD);
- European Maritime and Fisheries Fund (EMFF)

4 Strategic Operational Programmes in the Mainland:

- Competitiveness and internationalisation (COMPET);
- Social inclusion and employment (COSME);
- Human capital (COOP);
- Sustainability and the efficient use of resources (COSMUS)

4 Regional Operational Programmes in the Mainland:

- NORTH (NORTE 2000);
- CENTRE (CENTRO 2000);
- LISBON (LISBOA 2000);
- ALentejo (ALentejo 2000);
- ALGARVE (ALGARVE 2000);
- ALentejo (ALentejo 2000)

2 Regional Programmes in the Autonomous Regions (Açores and Madeira):

- AZORES (AÇORES 2000);
- MADEIRA (PROGRAMA MADEIRA 14-20)

26

R&I in the regional Agri-food sector

SMART SPECIALISATION OF CENTRO REGION 2014-2020

Considering the Agri-food sector, the cross-cutting priorities are:

- **Valorization of natural endogenous resources:** the innovation on this objective is related to the internationalization of the natural endogenous resources. The platform of innovation resulted in the creation of three broad groups of lines of action:

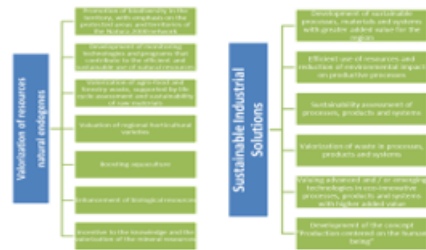
- 1) its conservation and sustainability;
- 2) its monitoring;
- 3) their transformation into innovative, value-added products and services that streamline the various value chains.

- **Sustainable Industrial Solution** integrates three ways of impact – economic, social, and environmental – allowing a cross-sectoral and multisector approach. (by Circular Economy and the sustainability of processes and products).

27

R&I in the regional Agri-food sector

SMART SPECIALISATION OF CENTRO REGION 2014-2020



28

Agri-food sector trends in Centro Region of Portugal

The dramatic changes of the Agri-food system must induce the modernization of agriculture and the consumers demands.

The drivers for the important changes are:

- Income growth
- Population growth and urbanisation
- Trade liberalization and capital flows
- Changes in transport and logistics
- Technology
- Information and communication
- Packaging and processing

29

Agri-food sector trends in Centro Region of Portugal

Drivers for the important changes:

- Income growth
- Population growth and urbanisation
- Trade liberalization and capital flows
- Changes in transport and logistics
- Technology (Information and communication, Packaging and processing)

Key Food and Nutrition Security priorities (by Food 2030):

- **NUTRITION** for sustainable and healthy diets
- **CLIMATE** for smart and environmentally sustainable food systems
- **CIRCULARITY** and resource efficiency of food systems
- **INNOVATION** and empowerment of communities

30

SWOT of agri-food sector in Centro Region of Portugal

R&I Infrastructures and capacities

Strengths	Weaknesses
<ul style="list-style-type: none"> R&I institutions, Universities, Clusters and incubators dedicated to the Agri-food Sector; Headquarters of producers' associations and infrastructures to support small companies located in the Region; 	<ul style="list-style-type: none"> Below average production of scientific and technological knowledge in Agrarian Sciences; Centro Region is below the national average in the creation of jobs related with high/medium-high technology industries; Lack of training or habilitation in the sector; Lack of qualified technical personnel; Lack of modern technology in the Agri-food supply chain – disinvestment in the sector.
Opportunities	Threats
<ul style="list-style-type: none"> Agriculture, forestry, sea-related economic activities in the specialization Action Plan of the Centro Region; New materials with high quality in the Region for research; Application of potentialities in new areas of knowledge such as nanotechnology, IoT with application in agri-food. 	<ul style="list-style-type: none"> Legal requirements in Europe are very strict; Reduced biodiversity might cause a food crisis; Modern technology is very high costed.

31

SWOT of agri-food sector in Centro Region of Portugal

R&I Infrastructures and capacities (cont.)

	Opportunities	Threats
Strengths	<ul style="list-style-type: none"> Data Promotion of high Value Products through the valorization of natural endogenous resources; Reflection about the efficient use of resources in the agri-food value chain preparation; 	<ul style="list-style-type: none"> Warnings R&I institutions, Universities, Clusters must be put efforts in prevent the constraints of food crisis; Producers' associations and infrastructures must provide support to companies about legal requirements.
Weaknesses	<ul style="list-style-type: none"> Restrictions Existence of needs of investment of technology; The Agri-food sector needs to transform its sector as attractive to qualified people; Efforts must be done in order to produce knowledge related with the Agriculture, forestry, sea-related economic activities 	<ul style="list-style-type: none"> Risks The incidence of qualified workers will induce a stagnation in the development of the sector; The disinvestment in technology for Agri-food will produce lack of competitiveness comparing to other regions/countries.

32

SWOT of agri-food sector in Centro Region of Portugal

R&I Public/private collaboration

Strengths	Weaknesses
<ul style="list-style-type: none"> Centro Region known by its expertise capacity; Cultural heritage and skilled to knowledge and innovation, allow to obtain products of excellence; Companies and R&I entities worldwide recognized that assume the role of leaders at a sector of specialization; 	<ul style="list-style-type: none"> Predominance of small companies, without many resources, mainly human resources; Difficulty in attracting human capital due to the precarious wages associated to the sector; Tenuous "collaborative work" between companies and R&I; Few incentive systems for collaboration between private companies and CSCT entities; Weak Awareness of production potential;
Opportunities	Threats
<ul style="list-style-type: none"> Increase of the knowledge transfer of the research centers; National and international programmes for the promotion of collaboration between R&I entities and companies of the Agri-food sector; Global demand for more nutritious and functional foods that forces to collaborate with research centers; Growing collaborative work between private companies and CSCT entities; Greater transfer of knowledge between CSCT centers and companies; Collaboration in response to consumer trends in new product development; Response to the Consumer Demands; 	<ul style="list-style-type: none"> Activities subject to great national and international competition – search for the lowest price; Activities subject to peaks of difficult control; Internationalization of products requires increased shelf life – investment/investigation in conditions for product preservation;

33

SWOT of agri-food sector in Centro Region of Portugal

R&I Public/private collaboration (cont.)

Strengths	Weaknesses
<ul style="list-style-type: none"> The Centro Region can take advantage of its expertise capacity to produce and export more nutritious and functional foods, by responding to the global demands; The list of products of excellence found in the region can be enlarged by the developing of collaboration between R&I entities and companies of the Agri-food; 	<ul style="list-style-type: none"> The consequences of lack of human resources in small companies can be reduced with the collaboration with other entities; The tenuous "collaborative work" between companies and R&I is obstructing the knowledge transfer, so this must be remedied by bridging the different actors with dynamization of activities;
Opportunities	Threats
<ul style="list-style-type: none"> The Centro Region must take advantage of its expertise capacity to produce and export more nutritious and functional foods, by responding to the global demands; The R&I entities present in the region must take actions in order to investigate how to control the new pests; The efforts in research must be real to increase the life shelf of products without jeopardizing its quality; 	<ul style="list-style-type: none"> The Centro Region must take notice to its traditional small companies that are not able to be so competitive with prices in the global sphere; Only with investment in the sector can the enterprises attract qualified human capital;

34

SWOT of agri-food sector in Centro Region of Portugal

Hybridization of the Agri-food sector with other sectors

Strengths	Weaknesses
<ul style="list-style-type: none"> Strong range of traditional products with Certification; Optimal geographical and landscape conditions for agricultural crops; Centro Region is the leader in several products production and its exportation; 	<ul style="list-style-type: none"> Predominance of small companies, without many resources, mainly human resources; Prominence of very traditional/familiar companies without the aim to innovate; The Centro Region "products are not so commercial" when competing to other national products like "Vinho do Porto" or "Pêlo de Neta"; Lack of Profitability;
Opportunities	Threats
<ul style="list-style-type: none"> Implementation of new agri-food industries in the Region, connected to the pharmaceutical and biotechnological research; Investment for Growth and Jobs in the field of research and innovation infrastructure and capacities; Development of marketing and communication campaigns taking advantage of products to the region; Digital skills for industry jobs expertise in different sectors for the specific products; Creation of a digital platform to bring together the sharing of services in the region, promoting cooperation and development of new products; 	<ul style="list-style-type: none"> Slowdown of the world and European economy; Difficulties of small producers to adapt to future new trends for Food and Safety; Global competition; Summer fires in the Centro Region might destroy the production obtain in the Centro Region;

35

SWOT of agri-food sector in Centro Region of Portugal

Hybridization of the Agri-food sector with other sectors (cont.)

Strengths	Weaknesses
<ul style="list-style-type: none"> Skills must be taken in the promotion of geographical and landscape conditions of the Centro Region to attract more industries of research connected to specialized activities and agri-food, as biotechnological and pharmaceutical; Investment in innovation infrastructure and capacities can increase the range of traditional products with Certification; 	<ul style="list-style-type: none"> The slowdown in world economy might reduce the exportations of the Centro Region; The small producers in the Centro Region have access to optimal conditions but are not able to adapt itself to the new trends; The summer fires attack the productions in the Centro Region, destroying the landscape and crops. The actor of the sector must take preventive measures; The global competition in the Agri-food sector is increasing, so the traditional products can be not enough to the Centro Region compete at worldwide level;
Opportunities	Threats
<ul style="list-style-type: none"> Traditional/familiar companies are overshadowed with the placement of big industries in the Region; The lack of profitability must be reduced by diminishing the production costs through investments in innovation infrastructure and capacities; The lack of resources is restricted as the investment in growth and jobs is the opportunity to surpass it; 	<ul style="list-style-type: none"> The slowdown in world economy might reduce the exportations of the Centro Region; The traditional producers are very affected by the natural disasters in Portugal; The small producers (most of the Centro Region producers) will be overshadowed when new and more demanding trends and requirements appear for Food and Safety. Only with the right support to innovation can then survive; The slowdown of the world economy can induce the return of the consumption of the cheapest products, breaking the small companies that cannot compete with cheaper prices;

36

Good Practices

1. Portuguese AgroFood Cluster – Products and Services Collaborative Innovation Model (on going)

consortium of 4 players of the agrofood sector in Portugal (Portugal Foods, Agroduster, Inovcluster and Portugal Fresh).

2. SCOOPE- Toolkit for Intelligent and Collaborative Energy Savings in Agrofood (on going)

Reduce energy consumption, implementing cost-effective energy solutions in 81 businesses in the sectors: crop drying, meat/poultry, dairy, fruit and vegetables

3. Food Fab Lab - Shared Productive Unit (on going)

Industrial unit of shared use, with industrial licensing, to allow the start up business projects, production of small series and experimental lots.

4. Smart Rural Smart HIESE (on going) <https://www.smartural.pt/incubadora>

Rural entrepreneurship and innovation, leveraging the Business Innovation Habitat in Strategic Sectors as the preferred space for creating innovative ideas and business initiatives in rural areas.

37

Conclusions

- Companies in the Centro Region represents 14% of the Agri-food sector;
- The main activity of the sector's companies is "agriculture, animal production, hunting and related service activities", related mainly with the primary sector (79% of the Agri-food sector in the Centro Region);
- Employment: absorb 11.6% of the total employment of the Centro Region;
- The 5 most exported goods: Fish and crustaceans or molluscs (20% of the total exportations); Beverages, spirits and vinegar (14%); Fruits (11%); Preparations of meat, of fish, of crustaceans or molluscs (11%) and Preparations of cereals, flour, starch or milk; bakery products (11%);
- Companies were among the ones that invest more in innovation, contributing 22% for the total expenditure;
- The Centro Region is a Moderate + Innovator and benefits from the collaboration with innovative SMEs, SMEs innovating in house, non-R&D innovation expenditures and firm innovation;
- The Centro Region has a good perform in marketing and organizational innovation and product/process innovation, and accounts for 19.3% of the total number of national research units and associated laboratories;

38

Agri Renaissance
Interreg Europe

Peer review Workshop for agri-food sector in Centro Region

Moderator: eng. Cláudia Rodrigues

39

Agri Renaissance
Interreg Europe

Methodology for peer review

The methodology adopted is based in the S3 Platform Peer Review Methodology. It is organised in 3 phases: i) Preparation; ii) Workshop and discussion and iii) Follow up

```

graph LR
    subgraph "1 Preparation"
        A[Study visit] --> B[Regional diagnosis and good practices]
        B --> C[Assessment questionnaire]
    end
    subgraph "2 Workshop and discussion"
        D[Results of table discussions] --> E[Lessons learned by each region]
        E --> F[Assessment questionnaire fulfilled]
    end
    subgraph "3 Follow up"
        G[Final peer review report]
    end
    C --> F
    F --> G
    
```

40

Agri Renaissance
Interreg Europe

Key questions for analysis

Question 1 How the R&I infrastructures, companies and actors can be coordinated to overcome low qualified workforce, improving better Innovation results?

Question 2 How take advantage of region export capacity (and other strengths) to foster R&I Public/private collaboration?

Question 3 What examples can be suggested to promote hybridization of food agriculture sector with other industries?

41

Agri Renaissance
Interreg Europe

Time for action

Join one table (each one with a representative of hosting region)

Introduce yourself to other people at your table

Nominate a **rapporteur** that will summarise the results of the discussion in the end

Discussion, Sharing, Conclusions

Fill out the assessment questionnaires and the lessons learned form

42

Agri Renaissance
Interreg Europe

Discussion

- Find the question behind the question (yellow).**
Discuss the question assigned in order to better understand the problem faced by the region. Build a "new question behind the originally posed question" that allows a better understanding of the problem to solve.
- Policy suggestions (green).**
Propose policy suggestions based on your own experience and knowledge. Share both positive and negative experiences. Analyse if these experiences can be applied in the hosting region. Agree on a list of the 3 most important suggestions.
- Lessons learned (pink).**
Reflected on what you have personally learned on the peer review exercise. Share your lessons with the group. Each group must agree on 3 most relevant lessons learned.

43

Agri Renaissance
Interreg Europe

Sharing

Present and share your main ideas

44



2.2.2 - WORKSHOP & DISCUSSION – ON LINE SURVEY & COMMENTS S OF THE PEER REVIEW. (EIGHT RESPONSES)

A survey was prepared and sent on 27st March, with 1 week to answer, for the project partners to receive their contributes on the review of R&I policies of agri-food sector in CENTRO REGION of PORTUGAL, according to the three thematic areas:

- i) R&I infrastructure & capacities in agri-food sector in CENTRO REGION of PORTUGAL;
- ii) R&I public-private collaboration in agri-food sector in CENTRO REGION of PORTUGAL;
- iii) hybridization of the agri-food sector with other sectors in agri-food sector in CENTRO REGION of PORTUGAL.

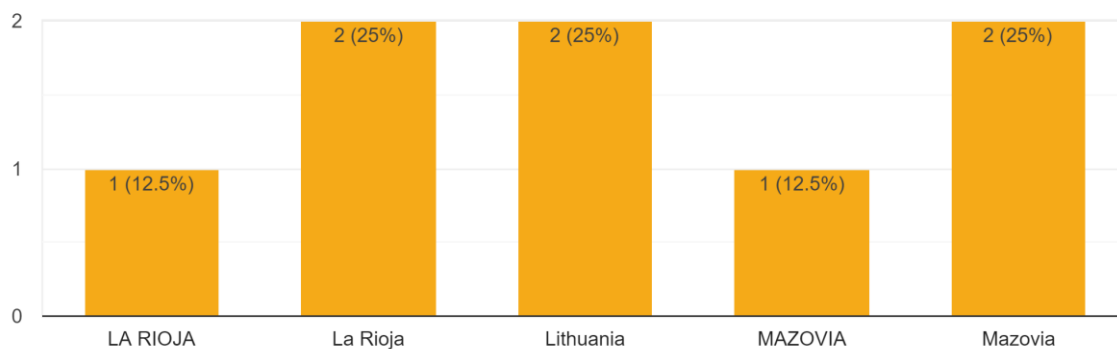
The option to provide observations or comments to each of the objectives of the project was also given.

The contributions of the 8 responses given, are presented below:

SURVEY RESULTS

REGION

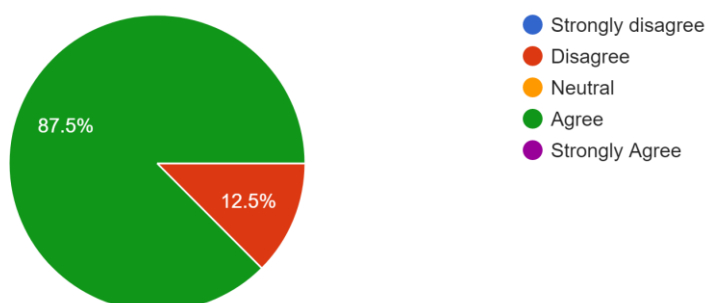
8 responses



1. R&I Infrastructures and capacities.

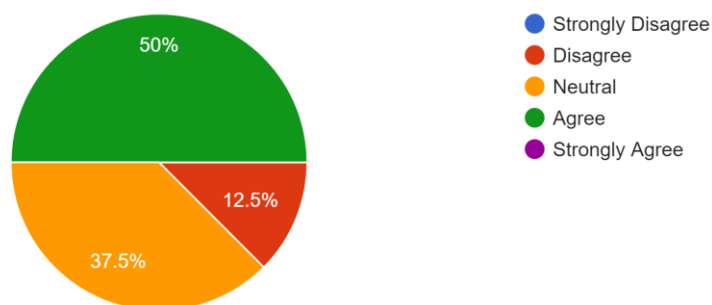
1.1 The technical and scientific resources available are enough according to the socioeconomic and scientific profile of the region

8 responses



1.2 The coordination among public and private agents to use the R&I infrastructures and capacities is optimal.

8 responses



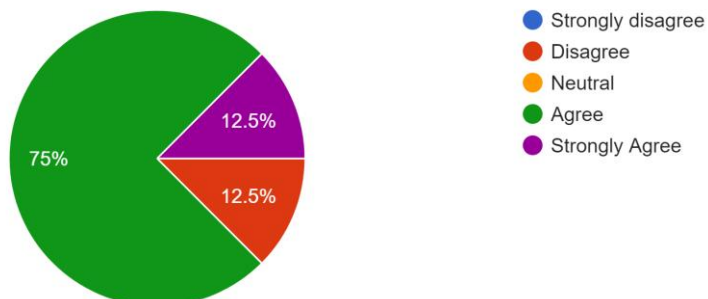
COMMENTS ON OBJECTIVE 1: R&I Infrastructures and capacities.

- The region has a wide range of R&I institutions, Universities, Companies, Clusters and Incubators dedicated to the Agri-food Sector. Moreover, RIS3 CENTRO has identified the agriculture and the agri-food as a strategic sectors.
- In our study visit, we saw the presentation of the Instituto Nacional de Investigação Agrária e Veterinária (INIAV), which has a vast network throughout the country of research centers, mainly dedicated to applied research. Its infrastructures seems to be good and in my opinion have a close relationship with the Clusters and companies in the agri and livestock sector.
- In relation to the companies we visited, I cannot give a broad opinion since we were only able to visit one of them, but it seemed to me like a great cooperative that tries to promote innovation in the country's agricultural industry.
- In relation to Tagusvalley, although we did not have the opportunity to visit its facilities, I believe that the presence of a center of these characteristics is necessary to act as a link between the institutions dedicated to research and companies. It is an innovation center in the agrifood sector, mainly focused on the local territory.
- Region has troubles with high technology industry. There is lack of qualified personnel. Lack of modern technology in the agri food supply chain
- The presence of the research units and laboratories allows the businesses to have access to high qualified human capital and infrastructures.
- The food innovation center visited is very interesting and an example of scientific infrastructure. It is an example to import to our region

2. R&I public-private collaboration.

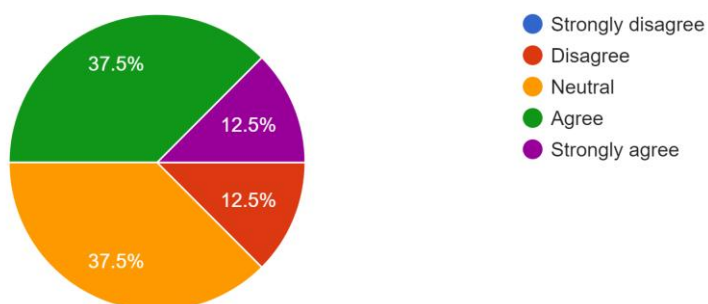
2.1 Public research centers are oriented to the needs of the agri-food sector.

8 responses



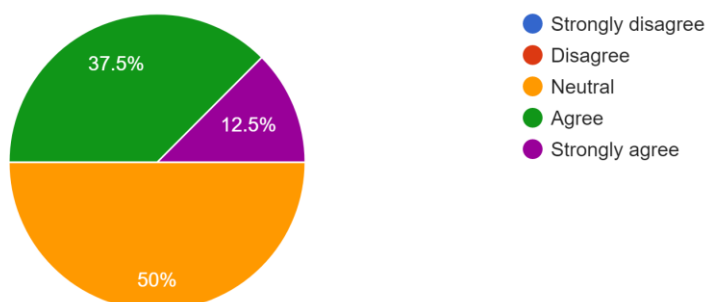
2.3 The collaboration among public and private actors of agri-food sector is efficient

8 responses



2.1 Potential of agricultural clusters are high with role of the main protagonists in fostering the innovation in the enterprises

8 responses

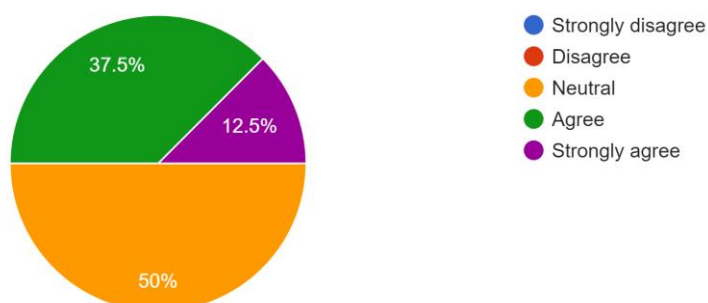


COMMENTS ON OBJECTIVE 2. R&I public-private collaboration.

- RIS3 CENTRO has identified agriculture and agri-food as strategic sectors, and there are many institutions that work together to promote innovation in the agri-food sector. A good example is the cluster policies where we can find important clusters such as CentroHabitat, InovCluster, AgroCluster, Forum Oceanoagrocluster.
- In relation to public-private cooperation, unfortunately, I cannot say anything more than what was mentioned in the previous section, since we did not have the opportunity to know the companies and centers of the región in the first hand.
- Better collaboration has to be done. It would cause the rise of modernization of agriculture.
- Few incentive systems for collaboration between private companies and ESCT entities
- A dynamic and innovative business sector has been identified. A solid network of collaboration between agents is observed (cluster, companies, public research centers ...)
- no comments
- It seems, that financing tools could be encreased
- Not enough information on existing funding tools to foster collaboration between public and private sector.

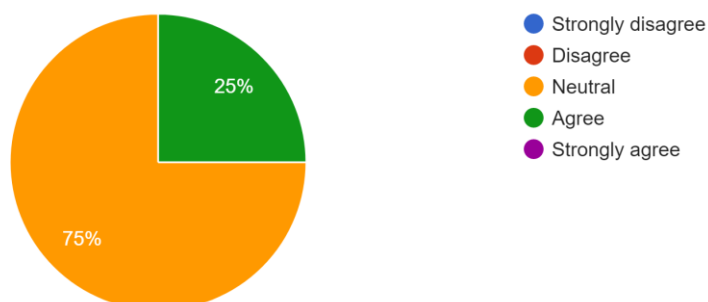
3. Legal framework for hybridization of the agri-food sector with other sectors is sufficient and effective.

3.1 The main players are being involved in the process of technology implementation
8 responses



3.3 A high degree of implementation of ket's technologies has been observed in the agri-food sector.

8 responses



COMMENTS ON OBJECTIVE 3: Hybridization of the Agri-Food Sector with other sector within and across regions.

- During the study visit, we got to know the activities of TAGUSVALLEY Parque Tecnológico do Vale do Tejo, a very good example of hybridization between sectors. At TAGUSVALLEY we can find in the same center different R&D lines in robotics, electronics, robotics, automation, energy and industrial design along with facilities for the development of products and processes for the agri-food sector.
- I think INIAV and TAGUSVALLEY has several tools and relationship with other centers and institutions across the region ,as well as projects, mainly regional and local, that allow them to collaborate with other centers that develop other technologies, mainly in the health sector.
- important is the interaction between the National Scientific and Technological System, the industries and the primary sector.
- Creation of a digital platform facilitate sharing services in the, promoting cooperation and development of new products.
- No coments
- no comments
- No comments
- Not enough of information to assess potential of hybridization of agri-food sector with other sectors.

4. Propose positive aspects or lessons learned in this study visit, related to the objectives of the Agri Renaissance project.

1. I would like to highlight that the TAGUS VALLEY technology center, is a very good example of technology hybridization in the agri-food sector. In addition, they also have initiatives for the technology transfer and startups' incubation
2. Wide network, throughout the entire territory, of applied research centers based on the needs of agricultural companies
3. Cluster that brings together and allows collaboration and participation in innovation between the different agricultural companies in the region. Promoting its development in R&D.
4. Technology centers and technology parks based on the most innovative aspects of the agri-food sector, which collaborate with companies to boost their commitment to R&D and development.
5. interesting solutions shown by National Institute for Agrarian and Veterinary Research

Solutions of Agromais, which is the largest national farmers' organization/association in the sector of selling cereals and other agricultural products.
6. Despite the small size of the cluster, there is a high level of innovative activity and a good network of innovation. The partners with whom it works and its relationship with public research centers and companies is an example to follow. It is recommended that you open up to the outside world and work in international networks in order to increase your capacities and resources.
7. no comments
8. Tagus Valey is the good example of the collaboration in the R&D

Infrastructure for collaboration is good, human resources are high quality. Agro-food cluster is strong in this region.

3. CONCLUSIONS

- **Regarding the R&I infrastructure and capacities in agri-food sector in CENTRO REGION of PORTUGAL:**
 - **Results of the survey demonstrate that the strengths on R&I infrastructure and capacities of agri-food sector in CENTRO REGION of PORTUGAL are:**
 - ✓ Wide range of R&I institutions, Universities, Companies, Clusters and Incubators dedicated to the Agri-food Sector.
 - ✓ Good infrastructures of Instituto Nacional de Investigação Agrária e Veterinária (INIAV), with a vast network throughout the country of research centers, mainly dedicated to applied research.
 - ✓ Existence of cooperatives that tries to promote innovation in the country's agricultural industry.
 - ✓ Existence of scientific infrastructure, like Tagusvalley, that act as a link between the institutions dedicated to research and companies.
 - ✓ The presence of the research units and laboratories allows the businesses to have access to high qualified human capital and infrastructures.
 - **Results of the survey demonstrate that the most challenging aspects on R&I infrastructure and capacities of agri-food sector in CENTRO REGION of PORTUGAL is:**
 - ✓ High technology industry: there is lack of qualified personnel and a lack of modern technology in the agri food supply chain.
- **Regarding R&I public-private collaboration in agri-food sector in CENTRO REGION of PORTUGAL:**
 - **Results of the survey demonstrate that the strengths on public and private collaboration for R&I of agri-food sector in CENTRO REGION of PORTUGAL are:**
 - ✓ RIS3 CENTRO has identified agriculture and agri-food as strategic sectors, and there are many institutions (Clusters) that work together to promote innovation in the agri-food sector.

- ✓ A dynamic and innovative business sector has been identified, and a solid network of collaboration between agents is observed (cluster, companies, public research centers ...);
- **Results of the survey demonstrate that the most challenging aspects on public and private collaboration for R&I of agri-food sector in CENTRO REGION of PORTUGAL are:**
 - ✓ Collaboration could be better, enhance the modernization of agriculture;
 - ✓ Few incentive systems for collaboration between private companies and ESCT entities.
- **Regarding hybridization of the agri-food sector with other sectors in CENTRO REGION of PORTUGAL:**
 - **Results of the survey demonstrate that the strengths on hybridization of the agri-food sector with other sectors in CENTRO REGION of PORTUGAL are:**
 - ✓ Interaction between the National Scientific and Technological System, the industries and the primary sector.
 - ✓ TAGUSVALLEY, is a very good example of hybridization between sectors, where it's possible to find in the same center different R&D lines in robotics, electronics, robotics, automation, energy and industrial design along with facilities for the development of products and processes for the agri-food sector.
 - ✓ INIAV and TAGUSVALLEY has several tools and relationship with other centers and institutions across the region, as well as projects, mainly regional and local, that allow them to collaborate with other centers that develop other technologies, mainly in the health sector.
 - **Results of the survey demonstrate that the most challenging aspect on hybridization of the agri-food sector with other sectors in CENTRO REGION of PORTUGAL is:**
 - ✓ Sharing services in promoting, cooperation and development of new products. Creation of a digital platform could facilitate this issue.